



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,631	04/14/2004	Fabio Pellizzer	854163.414	6272
38106	7590	01/27/2006	EXAMINER	
SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVENUE, SUITE 6300 SEATTLE, WA 98104-7092			NGUYEN, JOSEPH H	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/824,631

Applicant(s)

PELLIZZER, FABIO

Examiner

Joseph Nguyen

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-17 and 19-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-17 and 19-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10-17 and 19-31 are ejected under 35 U.S.C. 102(e) as being anticipated by Bez et al. (US 6,891,747).

Regarding claim 10, Bez et al. discloses in figures 14-15 (showing the same embodiment) a phase change memory cell comprising a cup shaped resistive element 22 having a substantially vertical wall, said vertical wall having a top surface of sublithographic thickness (col. 5, lines 25-40); a delimiting structure 27, 28 having an aperture over said resistive element; and a memory portion of a phase change material 38 (col. 5, line 5) housed in said aperture, said memory portion being in direct electrical contact with the top surface of the vertical wall of the cup shaped resistive element and defining a contact area 45 (col. 5, line 49) of sublithographic extension; wherein said memory portion is sealed inside said aperture by a sealing structure 39, 40, 42 where dielectric 42 is directly lying on the delimiting structure 27, 28.

Regarding claim 11, Bez et al. discloses in figure 14 the delimiting structure comprises at least a dielectric layer 27 (col. 4, lines 34-35).

Regarding claim 12, Bez et al. discloses in figure 14 the sealing structure 39, 40, 42 where dielectric 42 is directly lying on the dielectric layer.

Regarding claim 13, Bez et al. discloses in figure 14 the delimiting structure comprises adhesion portions 28 (col. 4, line 36) interposed between said dielectric layer 27 and said sealing structure 39, 40, 42.

Regarding claim 14, Bez et al. discloses in figure 14 the memory portion 38 is aligned with the delimiting structure.

Regarding claim 15, Bez et al. discloses in figure 14 the sealing structure comprises a stack of conducting layers 39, 40 (col. 5, lines 10-11).

Regarding claim 16, Bez et al. discloses in figure 15 the resistive element 22 includes a first thin portion having a first sublithographic dimension in a first direction and the memory portion 38 has a second sublithographic dimension in a second direction traverse to said first direction; the contact area 45 of sublithographic extension having substantially the first sublithographic dimension in the first direction and the second sublithographic dimension in the second direction (col. 5, lines 33-40).

Regarding claim 17, Bez et al. discloses in figure 15 the memory portion has a substantially elongated shape with a main dimension extending parallel to the first direction.

Regarding claim 19, Bez et al. discloses in figure 12 (showing the same embodiment) the aperture is a slit 37 (col. 5, line 1).

Regarding claim 27, Bez et al. discloses in figure 15 a width of contact area 45 is substantially the same as the thickness of the vertical wall of the cup shaped resistive element 22.

Regarding claim 28, Bez et al. discloses in figure 15 the cup shaped resistive element is filled within the substantially vertical wall with a dielectric material 23 (col. 4, lines 33-33).

Regarding claim 20, similar to claim 10 above, Bez et al. discloses in figure 14 all the structures set forth in the claim. Bez et al. further discloses in figure 15 the contact area 45 of a first dimension of less than 100 nm and a second dimension of less than 100 nm, said second dimension being substantially perpendicular to said first dimension (col. 5, lines 33-44).

Regarding claims 21-22, Bez et al. discloses the selection element is a transistor or a diode (col. 2, lines 9-10).

Regarding claim 23, Bez et al. discloses in figure 12 (showing the same embodiment) the aperture is a slit 37 (col. 5, line 1).

Regarding claims 24-26, in a similar manner, Bez et al. discloses in figures 22-23 (showing the same embodiment) all the structures set forth in the claims.

Regarding claims 29-31, in a similar manner, Bez et al. discloses in figures 14-15 all the structures set forth in the claims. Bez et al. further discloses in figure 15 the contact area 45 is having a first dimension substantially the same as the first width of the resistive element and a second dimension substantially the same as the second width of the slit wherein the first dimension of the contact area is about 60 nm or less

and the second dimension of the contact area is about 60 nm or less (col. 5, lines 25-44).

Response to Arguments

Applicant's arguments with respect to claims 10-17 and 19-31 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

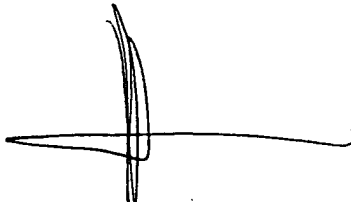
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN
January 10, 2006.



KENNETH PARKER
SUPERVISORY PATENT EXAMINER